

Paper Towel Gardening

Objective: To create seed mats and transplant templates to help organize and lay out the garden.

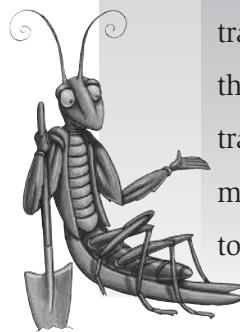
Time: 30 minutes.

Materials: Paper towels that are about 1 foot square, seed, school glue, markers, masking tape, Planting Charts (in the Appendix).

Team up the gardeners and give two paper towels to each pair. Help them choose two plants to grow from their planting charts. Encourage them to choose one plant started by seed and one plant started by transplant. They will use the paper towels as spacing and layout guides when they plant in the garden. Have the partners write their names, their plant's name, and the word short, medium or tall to describe the plant's height on each towel. Tell them they will plant their seed in a mini-garden the size of the paper towel, and ask them how many plants can grow in that little space.

Ask the gardeners why they cannot grow many plants in a small space. What problems might the plants have? Have the gardeners locate their vegetable in the Planting Chart in the Appendix and determine how many plants can be grown in the space the size of a single paper towel.

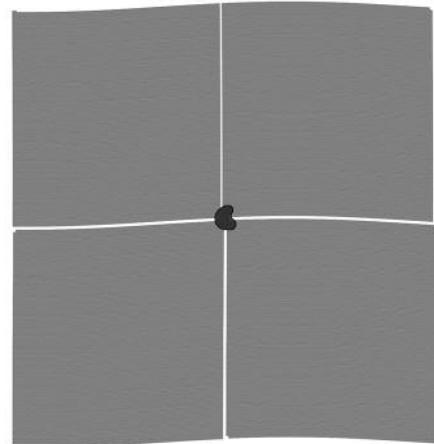
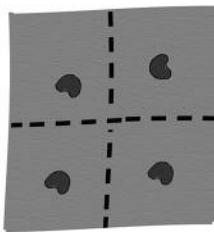
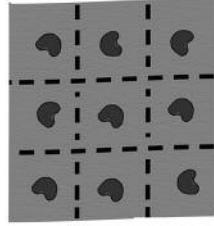
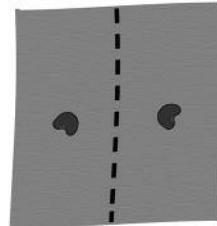




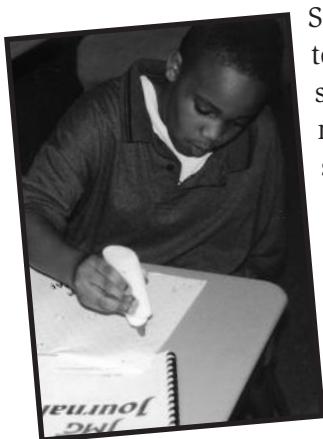
The directions that follow apply to both seeds and transplants. If the gardeners are planting seeds, they can glue them directly to the paper towel. If they are planting transplants, they can use the paper towel as a template and mark a spot or cut a hole in the towel to show them where to plant when they are in the garden later.



If the chart shows one seed per towel, the gardeners should paste a single seed (or make a mark) in the very center of the towel. If the chart shows four seeds per towel, the gardeners should fold their towels in quarters to make four equal sections. A seed can then be pasted in the middle of each of the four sections. If a plant calls for nine seeds per towel, the gardeners should fold the paper towel into thirds and then into thirds again, and paste a seed into the middle of each of the nine sections that result. (The children may have difficulty folding the towel into thirds, and may require some help.)



Explain that some seeds just don't germinate. It is a good idea to glue 1 or 2 extra seeds in each spot. If all the seeds do come up, all but one can be picked away. Explain that this is called THINNING. In this way we choose the strongest looking plant to keep growing. When the gardeners remove the extra plants, have them pinch off each seedling at the base so the roots of others aren't disturbed as when pulling the plant out.



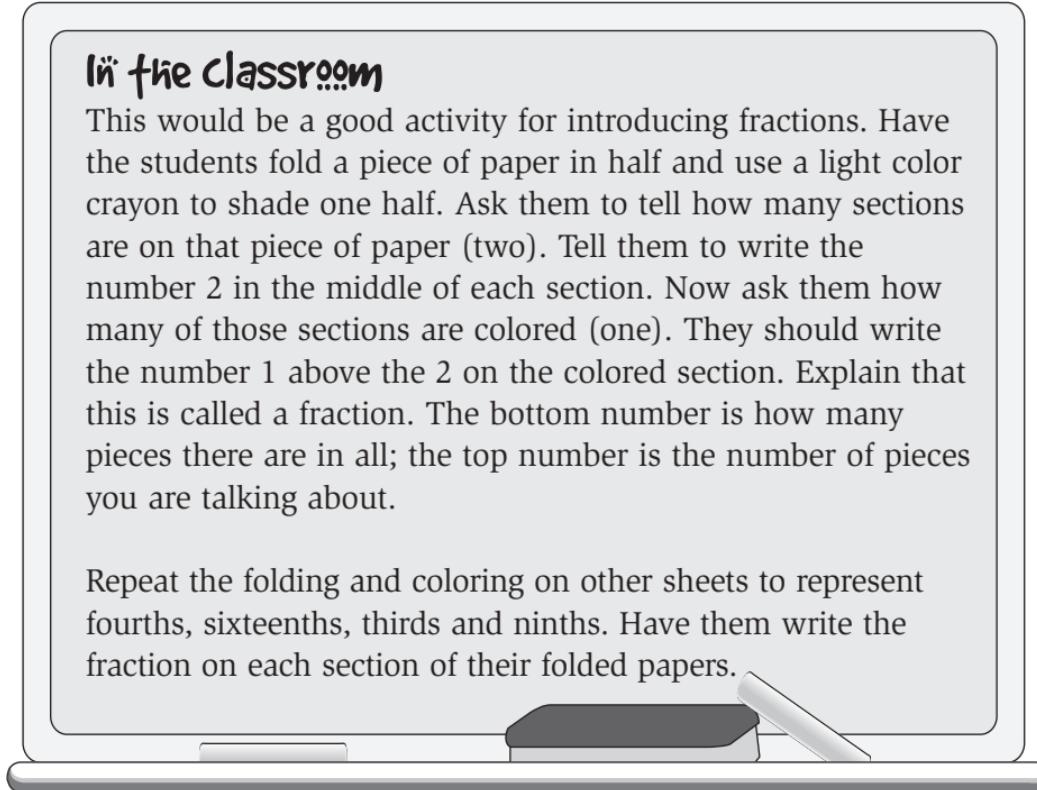
Some plants such as squash grow large enough to require four squares, or towels, of space. Gardeners who choose crops that need this much space should tape four towels together to make a larger square (or a full sheet of newspaper can be substituted for this large square) and then paste the seed in the center. It is a good idea to use a paper tape, such as masking tape, and not glue the seed directly over the tape. If the garden space is small, you may need to limit the number of gardeners who choose plants requiring four paper towels.



In the Classroom

This would be a good activity for introducing fractions. Have the students fold a piece of paper in half and use a light color crayon to shade one half. Ask them to tell how many sections are on that piece of paper (two). Tell them to write the number 2 in the middle of each section. Now ask them how many of those sections are colored (one). They should write the number 1 above the 2 on the colored section. Explain that this is called a fraction. The bottom number is how many pieces there are in all; the top number is the number of pieces you are talking about.

Repeat the folding and coloring on other sheets to represent fourths, sixteenths, thirds and ninths. Have them write the fraction on each section of their folded papers.





FALL PLANTING GUIDE

The time to plant vegetables is based on the weather. Plant crops that are susceptible to cold early enough in the fall so that they mature before the first freezing weather.* Cold-hardy crops, which can withstand all but the coldest of weather conditions, are usually planted much later.

If a frost occurs earlier than the average date, some of the less frost-tolerant plants may be damaged, and some of the harvest may be lost. You can minimize this problem by preventing heat from escaping by covering the garden with a light blanket, a clear plastic shower curtain or a row cover that you can buy.

Some crops with special considerations are noted on the chart and explained below:

- ♣ Garlic is grown by dividing a head into individual cloves and planting each one. Onions can be grown by seed; however, they are usually planted as “sets,” or small onions, in late fall to early winter.
Potatoes are grown by planting “seed” potatoes, which are sections of large potatoes that have been cut into chunks including an “eye,” or node. The new growth will emerge from these nodes.
 - T Transplants can be grown by either seed or transplant—you may want to do both. Tomatoes are not included in the seed list. They should be grown from transplants in the fall, unless you start them from seed in midsummer. Plant transplants so that the root ball is completely covered with a soil layer no more than $\frac{1}{4}$ -inch thick. If the root ball is left exposed, it may wick water into the air away from the plant, and the plant may dry out and die.
- * The recommended planting dates can vary greatly depending on where you live. Contact your county Extension office for information to complete your Fall Planting Chart.

Name _____ Date _____



FALL PLANTING CHART

Crop	Recommended Planting Date	Number of Seeds per Paper Towel	Planting Depth	Days to Harvest	Country of Origin
Root Crops					
Beets		9	$\frac{1}{2}$ inch	55 to 70	Mediterranean area
Carrots		16	$\frac{1}{4}$ inch	70 to 80	Afghanistan
Garlic ♣		16	1 inch	100 to 200	Pakistan
Onions ♣		16	1 inch	80 to 120	Pakistan
Potatoes ♣		1	4 inches	70 to 90	Chile and Peru
Radishes		16	$\frac{1}{2}$ inch	25 to 40	China and Middle Asia
Turnips		9	$\frac{1}{2}$ inch	30 to 60	Mediterranean area
Leaf Crops					
Brussels sprouts		1	$\frac{1}{4}$ inch, or T	120 to 150	Mediterranean area
Cabbage		1	$\frac{1}{4}$ inch, or T	60 to 120	Mediterranean area
Chard		4	1 inch	45 to 80	Mediterranean area
Collards		4	$\frac{1}{2}$ inch	45 to 80	Mediterranean area
Kohlrabi		1	$\frac{1}{2}$ inch	50 to 75	Mediterranean area
Lettuce(leaf)		4	$\frac{1}{4}$ inch, or T	45 to 60	Egypt or Iran
Lettuce(head)		4	$\frac{1}{2}$ inch, or T	40 to 90	Egypt or Iran
Mustard greens		4	$\frac{1}{2}$ inch	30 to 50	Mediterranean area
Parsley		4	T	20 to 120	Mediterranean area
Spinach		9	$\frac{1}{2}$ inch	40 to 60	Iran
Turnip greens		4	$\frac{1}{2}$ inch	30 to 60	Mediterranean area
Flower/Fruit Crops					
Beans (bush)		4	1 inch	45 to 60	Mexico, SW U.S.
Beans (pole)		4	1 inch	50 to 70	Mexico, SW U.S.
Broccoli		1	$\frac{1}{4}$ inch, or T	60 to 80	Mediterranean area
Cauliflower		1	$\frac{1}{4}$ inch, or T	60 to 100	Mediterranean area
Cucumbers		2	1 inch	50 to 70	India
Squash		1 plant per 4 squares	1 inch	45 to 90	Mexico, SW U.S.
Tomatoes		1	$\frac{1}{4}$ inch, or T	60 to 80	Andes Mountains in South America